THE
TRAINING SCHOOL BULLETIN

DECEMBER 1915

A child must like to do its tasks.

We must create in the child a real desire to do things.

The good teacher learns her child and then teaches him.

It is not so much what a child knows as what he can do that counts.

Encouragement means an increase in energy—discouragement means a loss.

Expression means enlargement of ideas, ideals and possibilities; repression means narrowness of thought and action.

Since the time that the Good Samaritan's services were needed on the old Jericho road, thieves and robbers have abounded there, and many there have been whose wounds have needed binding up, and for whose cure and care much money has been spent, but what is really needed is a proper policing of the road to check the crime. So we must learn to check the stream of deficiency which leads to suffering, poverty, crime and inability.

All children need to study in bright, cheery and well-ventilated rooms. In the past our schools were dull and bare and stuffy. The movement into the cities has taken away from the child the woodpile, the stable, even the kitchen, with all of the lessons that were learned in them. For many there is no playground but the street or a paved backyard, and too often we find well-to-do mothers turning their own children over to nurses and governesses while they spend much of their time telling poorer mothers what to do for their children. We need a great increase of scientific child study, but it should be done with the heart as well as with the head.

The Menantico Colony grew enough corn this year to nearly fill their new silo. This is better than we had hoped. The boys were especially pleased and very proud of their crop.

It may have been said before in these columns, but we want again to express our appreciation to Mr. Joseph Dowler for the pleasure he has so often given large numbers of our children by giving them free seats—and good seats—at the Vineland Auditorium. This change of entertainment and the opportunity to see professionals play gives us a great deal of happiness.

Much has been done for the feeble-minded in our State, but we realize how slowly things move when we know that the following paragraph, written twenty-six years ago, is so true to-day:

"There are hundreds of children in New Jersey streets, almshouses, public schools, reformatory and penal institutions who need such a school as this. Our criminal, vicious and lustful classes are being constantly fed by these mental incapacitates and morally irresponsibles.—*From Superintendent's Report, May 9, 1889.*

There have been several interesting—and we hope interested—groups visiting us lately. The class in Social Economics visited October 29th; a number of the South Jersey Schoolmasters' Association on the 30th; Dr. Kelsey's class in Sociology (about eighty) from the U. of P., November 6th; The Social Service Class of the Deaconess' House, Philadelphia, on the 8th; about twenty-five of our former Summer School students on the 27th. Individuals have visited from Texas, New York, Connecticut, Virginia, Pennsylvania, Ohio, Hawaii and California.

When a child finishes reciting, do you encourage the others to raise their hands to point out the errors? When the lessons are marked, is it the incorrect words or problems that are checked with the blue pencil? Every error thus emphasized is driven into the child's consciousness as though by the stroke of a hammer. What a glorious school room, where inaccuracies are observed only to make them accurate, where papers are marked to show what the child does know, where emphasis is laid on everything that is correct, where the children may applaud the thing which is done well. Such a room is as a long ladder, each round bristling with success and encouragement, leading upward to confidence and power. The mentally deficient child requires us to recognize this important fact in child training. If he is discouraged he stops, he becomes silent or stubborn. He may be led, never driven. Does not his training give a lesson to the teacher of his normal brothers and sisters?

A National Movement in Behalf of the Feeble-Minded

Recent investigations indicate that in every thousand of the population there are three persons so weak in mind as to be dangerous to society. Even the most conservative investigators for at least twenty-five years have agreed that the ratio is at least two in every thousand. These feeble-minded people cannot care for themselves properly nor manage their lives with prudence. They become easy victims of vicious people. They are unfit for parenthood because their children almost surely inherit their defects. Most of these weak-minded people are at large. Their presence in the community complicates other social problems. Many tramps, drunkards, prostitutes, paupers, delinquents and criminals are what they are because without proper care and control it is impossible for them to be anything else.

Eighteen states in the union have so far made no provision for these, their weakest citizens. In no state is there anything like adequate provision for them. The great majority of them are free in the community, debased and debasing and ever increasing the number of the anti-social classes. These are facts which the thinking people of the country should know. In order that they may be told and in the telling stimulated to action in behalf of these children of ill-fortune a new national organization has been formed —"The Committee on Provision for the Feeble-Minded." Its declared purpose is "To disseminate knowledge concerning the extent and menace of feeble-mindedness and to suggest and initiate methods for its control and ultimate eradication from the American people."

Within the past decade there has certainly been no dearth of national committees and commissions covering nearly every conceivable phase of human activity and social life. To few, if to any of these, has there been presented such an opportunity for real public service as to this new organization in behalf of the feeble-minded. There is unmistakable evidence that intelligent people and communities all over the country are being aroused to the menace of the feeble-minded. That it is a real menace no one with knowledge of the facts questions. More than eighty-five in every hundred of this class are outside of state control. There is little or no check to their reproducing their kind. The administration of our penal, correctional and charitable institutions is seriously hampered and complicated by their presence in these institutions. More than a third of the states have made no provision for their care. There is nothing like adequate provision in even a single state. Our public schools face the necessity

of providing educational facilities suited to the needs of retarded and backward children, and the even greater necessity of so adjusting this special work that the retarded or merely backward child shall not be identified with the true mental defective. Certainly these considerations open up a most fertile field of opportunity to this new Committee.

The work laid out for it is surely of transcendant importance to the whole country. The objects it has in mind will not be accomplished in one year nor in ten. But the Committee begins with the realization that its work must be at once educative and constructive; that whatever shall be accomplished must come through increased public interest based upon definite knowledge as to just what constitutes "the menace of the feeble-minded."

The formation of the Committee comes at an opportune time. It will not need to create a demand for its services in order to justify its existence. It is the demand, the crying need for such an organization, that has called it into being.

The Committee on Provision for the Feeble-Minded first took definite form at a meeting held in December, 1914, at the home of Mrs. E. H. Harriman, in New York City, at which were present most of those who now constitute its membership. It includes members of State Boards and Commissions from five states—Indiana, Pennsylvania, Massachusetts, New Jersey, Virginia; Superintendents and Board Members of Institutions for the Feeble-Minded in New York, Ohio, Pennsylvania, Massachusetts, New Jersey and Minnesota; representatives of the National Committee for Mental Hygiene, the Eugenics Record Office, the Wistar Institute of Anatomy of Pennsylvania, the Vineland Laboratories, Johns Hopkins University and Stanford University; Judges of Juvenile Courts from New York and New Jersey; and others who have been prominent in doing or supporting social welfare work.

The Committee, however, is not so much a new organization as the logical development of work that had been under way for some years previously.

Several years ago the Training School at Vineland, New Jersey, a private institution, established its Extension Department. The work of the School, under its Superintendent, Prof. E. R. Johnstone, and of its Research Department, directed by Dr. H. H. Goddard, was bringing to it from all sections of the country requests for advice and information and help that could not be met without an enlargenment of its facilities. Superintendent Johnstone and the Board of Managers of the School felt that these requests ought not to be ignored or refused, It was to meet this situation that the Extension Department of the School was organized in 1912. Up to that time no organized attempt had been

made to initiate a nation-wide campaign on behalf of the feeble-minded. Private funds contributed for the purpose made the Department possible and placed at its head as Director, Mr. Alexander Johnson, for many years the General Secretary of the National Conference of Charities and Correction. His profound knowledge of social questions, his great ability as a public speaker and his experience as Superintendent of the Indiana School for the Feeble-Minded fitted him ideally for the extension work.

Soon after the Extension Department began its work it became apparent that the growing demands would before long require further enlargement. Indeed the whole movement in behalf of the feeble-minded was reaching such proportions that it seemed to those who had fostered and supported the Extension Department and similar work elsewhere, that it could no longer be adequately handled through any local or even a state organization. The only solution seemed to be a National body.

That this national organization has been so soon accomplished is due largely to the active interest of Mr. R. Bayard Cutting, of New York City, a member of the Board of Directors of the new Committee and its Treasurer. Mr. Cutting has been for some years a member of the Board of Directors of the Training School.

The executive work of the Committee is in the hands of Mr. Joseph P. Byers, formerly Commissioner of Charities and Correction of the State of New Jersey. Mr. Byers has had twenty-eight years of public experience in social work as secretary of the Ohio Board of State Charities, Superintendent of the Indiana State Reformatory at Jeffersonville, Warden of the Eastern Penitentiary of Pennsylvania at Philadelphia, Superintendent of the New York House of Refuge and Commissioner of Charities and Correction of New Jersey. For many years Mr. Byers has been Secretary of the American Prison Association, is this year its President, and, like his colleague, Mr. Johnson, was formerly General Secretary of the National Conference of Charities and Correction.

Mr. Alexander Johnson, the former Director of the Extension Department at Vineland, now merged into the Committee on Provision, has become the Field Secretary of the new organization. His time will be given to public lectures and addresses wherever there is a demand for them that promises usefulness and offers an opportunity to further the work for which the Committee exists. Such demands are coming from all sections of the country, from Welfare and Women's Clubs, Civic and Church bodies, Medical and Teachers' Associations and State Commissions.

The Committee invites correspondence from those interested in the subject of the Feeble-Minded and offers its services wherever they may be utilized in furthering the objects for which it organized. Its headquarters are in the Empire Building, Philadelphia.

Communications should be addressed to the Executive Secretary.

The work of the Committee on Provision is being financed by private subscriptions from those interested. Among these are:

Mrs. E. H. Harriman
Mrs. C. B. Wittpenn
Mrs. George Woodward
Mr. R. Bayard Cutting
The Training School
Mr. Bleecker Van Wagenen
Mr. A. D. Julliard
Mr. Frederick Foster
Mrs. R. Fulton Cutting
Gen. Coleman du Pont
Mr. James Imbrie
Mr. R. Fulton Cutting
Mrs. C. C. Rumsey
Mr. Cleveland H. Dodge
Mrs. A. S. Carhart
Mr. H. M. Tilford
Dr. and Mrs. G. W. Douglas
Mr. Henry Clay Frick

The Board of Directors is made up of the following:

Chairman, Dr. Milton J. Greenman, Philadelphia; R. Bayard Cutting, New York City; Dr. Charles H. Frazier, Philadelphia; Bleecker Van Wagenen, New York City; Mrs. C. C. Rumsey, New York City; Hon. Harry V. Osborne, Newark, N. J.; Mrs. Caroline B. Wittpenn, Hoboken, N. J.; E. R. Johnstone, Vineland, N. J.; and Dr. Thomas W. Salmon, New York City.

In addition to the foregoing the Committee includes:

Miss Minna M. Bruere,	New York City.
Amos W. Butler, Sec'y Board of State Charities	Indianapolis, Ind.
Dr. C. B. Davenport, Resident Director, Eugenics Record Off.	Cold Spring Harbor, N. Y.
Dr. Katherine B. Davis, Commissioner of Corrections	New York City.
Dr. E. J. Emerick Supt. School for Feeble-Minded	Columbus, Ohio.
Samuel Fels, Board Member, Training School at Vineland	Philadelphia.
Dr. Walter E. Fernald, Supt. School for Feeble-Minded	Waverly, Mass.
Dr. Henry H. Goddard, Director Research Laboratories	Vineland, N. J.
Mrs. Montgomery Hare	New York City.
Mrs. E. H. Harriman	New York City.
Hon. Franklin C. Hoyt, Judge of Juvenile Court	New York City.
David Starr Jordan, Chancellor of Stanford University	Stanford Univ., Calif.
Robert W. Kelso, Sec'y Board of State Charities	Boston, Mass.
John A. Kingsbury, Commissioner of Charities	New York City.
Franklin B. Kirkbride, Sec'y Board, Letchworth Village	New York City.
Dr. C. S. Little, Supt. Letchworth Village	Thiells, N. Y.
Dr. Joseph T. Mastin, Sec'y State Board of Charities	Richmond, Va.
Dr. J. Morehead Murdoch, Supt. School for Feeble-Minded	Polk, Pa.
E. E. Read, Jr., President, Board of Education	Camden, N. J.
Dr. A. C. Rogers, Supt. School for Feeble-Minded	Faribault, Minn.
Dr. William H. Welch, Prof. Pathology, Johns-Hopkins University	Baltimore, Md.
Mrs. George Woodward	Philadelphia, Pa.

Binet Tests on Two Hundred Juvenile Delinquents

C. S. Bluemel, M. A.

From the Psychological Laboratory of the University of Colorado.

I have recently completed a series of Binet tests on two hundred juvenile delinquents from Judge Lindsay's Juvenile Court of the City and County of Denver. One hundred of these cases were boys placed on probation and reporting regularly at the Court, fifty were boys committed to the Boys' State Industrial School, and fifty were girls committed to the Girls' State Industrial School or to the Florence Crittenton Home.

I used the Goddard modification of the Binet scale. Inasmuch as the majority of my subjects were over twelve years of age, I encountered the usual difficulty in evaluating the Fifteen Year and Adult tests. It has been the practice of some investigators to grade these tests mathematically, giving double credit for correct answers. Obviously this is unsatisfactory, for the tests are worth more than double credit if we compute their value on a mathematical basis. But Goddard does not approve of any form of mathematical grading for these tests, for some of the tests have proven too easy, while others (the first of the adult tests, for instance) seem to call for special ability rather than general intelligence.

It seems, then, that the only satisfactory method of grading the Fifteen Year and Adult tests is to consider the answers to the questions as a whole, and to estimate the general intelligence that the answers reveal. This is the method that I have followed. To illustrate I will cite the answers given by three different girls to the question "What is the difference between pride and pretension?" The first replies: "If you have too much pride, you go to certain places—cafés and dance-halls. Some pretend to be proud but are poor." The second replies: "Pride means to be proud; and pretension means to pretend to be something that you are not." The third replies: "Pride is something in you that makes you—if you have enough of it—hold yourself a little above people that are without pride. Pretension is false pride." Obviously these answers indicate that the three girls are at different mental levels. This fact is also attested by their answers to the other questions; and the answers in their totality permit one to make a fair estimate of their mental ages.

In estimating the more advanced mental ages I have paid as much attention to the wrong answers as to the right ones, for the failures are particularly significant when one is estimating mental ages on a non-mathematical basis. Obviously if a boy of 16 can give only one word that rhymes with *day* and if he thinks that what the man saw hanging in the tree was a kite, it is not possible for him fully to redeem himself by answering one or two adult questions. The failures, then, must be regarded as well as the successes.

Admittedly, this method of evaluating the higher tests is unsatisfactory, but I know of no method that is more satisfactory. Certainly it seems better in evaluating these tests to exercise one's judgment rather than to exercise merely one's lead pencil.

In regard to my own series of tests, I may say that the full answers given by my two hundred subjects are recorded in a 650-page report which is on file at the Juvenile Court of the City and County of Denver and at the University of Colorado; thus, if any one should happen to be interested in this matter, he may confirm or confute my figures for himself.

At this point I may say a word in criticism of a couple of the tests themselves.

I believe that the first of the Ten Year tests (naming coins and bills) is entirely too easy. Practically all of my two hundred subjects passed this test, irrespective of age or mental status. I believe that the test should be placed in one of the earlier years.

I believe that the fourth of the Twelve Year tests (resisting suggestion) is unreliable. I have found that many of the subjects report the last three pairs of lines unequal after scrutinizing them with great care and giving the matter a good deal of intelligent consideration. On the other hand, I have seen feeble-minded subjects report the lines equal after giving the matter no consideration whatever and apparently without considering the possibility that the lines might be *nearly* equal. Here the intelligent subject fails on the test, while the unintelligent subject passes it. Another thing, it is a difficult matter to judge of the equality or inequality of a pair of lines. In experimenting a few years ago at the University of Colorado with *nearly* equal lines, we found that the shorter line was quite frequently judged to to be the longer—and this, too, by highly intelligent subjects. The problem, then, is not as simple as it seems, and I do not believe that any routine method of grading this test can be satisfactory.

I proceed now to a discussion of my statistics.

Table 1 shows that the average age of the 100 probationers is 13 years and 1 month. Their average mental age is 11 years and 9 months. Thus they are on an average 1 year and 4 months retarded. Their intelligence quotient, or the ratio between the mental and physical age, is .90. Binet says: "A child should not be considered defective in intelligence no matter

how little he knows unless his retardation of intelligence amounts to more than two years." Thus, working with averages, we find that the proba-

Table 1

	Average Age	Average Mental Age	Retarded	Intelligence Quotient	Average Basal Age	School Grades Retarded
Probationers	13-1	11-9	1-4	.90	10.9	2.0
First Offenders	13-0	11-9	1-3	.90	9.75	1.8
State Industrial School Boys.	13-9	11-9	2-0	.85	9.6	
State Industrial School Girls	16-9	12-8	4-1	.76	9.9	

tioner is normal. The intelligence quotient to indicate feeble-mindedness must fall below .80; hence we find that in this case the quotient is relatively high. The average basal age (the basal age being the lowest age at which it is necessary to test a child) is 10.9 years for the 100 probationers. In school the probationer is 2 grades retarded.

Fifty-four of the probationers were first offenders. I have calculated the averages for the first 50 of them. The figures are almost identical with those for the 100 probationers. Their basal age is a little lower, and they are a little less retarded in school.

The 50 boys at the State Industrial School are on an average 2 years retarded. Their intelligence quotient is .85; their basal age is 9.6 years.

The 50 girls at the State Industrial School and the Florence Crittenton Home are on an average 4 years and 1 month retarded. Their intelligence quotient is .76. Inasmuch as they are more than three years retarded, they would, according to the generally accepted standard, be considered mentally defective, or feeble-minded. Their intelligence quotient is well below .80, which fact would also imply feeble-mindedness. It should be noted, however, in regard to the intelligence quotient, that some investigators regard .80 as too high a limit, especially with older subjects. Furthermore, the intelligence quotient is not generally employed; it is a supplementary rather than a fundamental criterion.

In Table 2 we see that 66 of the 200 subjects test at their normal ages; that is, they are less than twelve months retarded or advanced. Five of the subjects are more than twelve months advanced. Twenty-five are more than one year* and less than two years retarded. Thirty-nine are more than two years and less than three years retarded. Sixty-five of the subjects, or 32.5%, are three or more years retarded, and would thus be considered mentally defective. If we eliminate those that test twelve years or over, in order to make full allowance for the deficiency of the tests in the higher years, we obtain a slightly more conservative estimate of 52 in 200, or 26%, mentally defective.

*This includes, of course, the negligible few that are exactly one year retarded. Similarly with the other years.

Table 2—Two Hundred Delinquents

	Number	Percentage		Mental Age Under 12	Mental Age 12 or over
Advanced	5	2.5%		2	3
Normal	66	33.0%		28	38
Retarded 1 year	25	12.5%		11	14
2 years	39	19.5%		25	14
3 years	22	11.0%		13	9
4 years	15	7.5%		12	3
5 years	12	6.0%	32.5%	11	1
6 years	6	3.0%		6	0
7 years	7	3.5%		7	0
8 years	3	1.5%		3	0
Total	200	100 %		118	82

Table 3—One Hundred Probationers

	Number	Percentage		Mental Age Under 12	Mental Age 12 or over
Advanced	5	5%		2	3
Normal	42	42%		21	21
Retarded 1 year	12	12%		6	6
2 years	24	24%		17	7
3 years	11	11%		7	4
4 years	2	2%	17%	2	0
5 years	3	3%		3	0
6 years	1	1%		1	0
Total	100	100%		59	41

Table 4—Fifty First Offenders

	Number	Percentage		Mental Age Under 12	Mental Age 12 or over
Advanced	5	10%		2	3
Normal	19	38%		9	10
Retarded 1 year	9	18%		3	6
2 years	10	20%		8	2
3 years	4	8%		4	0
4 years	2	4%	14%	2	0
5 years	1	2%		1	0
Total	50	100%		29	21

Table 5—Fifty S. I. S. Boys

	Number	Percentage		Mental Age Under 12	Mental Age 12 or over
Normal	17	34%		7	10
Retarded 1 year	8	16%		4	4
2 years	10	20%		6	4
3 years	6	12%		4	2
4 years	5	10%		5	0
5 years	3	6%	30%	3	0
6 years	0	0%		0	0
7 years	1	2%		1	0
Total	50	100%		30	20

Table 6—Fifty S. I. S. Girls

		Number	Percentage		Mental Age Under 12	Mental Age 12 or over
Normal		7	14%		0	7
Retarded	1 year	5	10%		1	4
	2 years	5	10%		2	3
	3 years	5	10%		2	3
	4 years	8	16%		5	3
	5 years	6	12%	66%	5	1
	6 years	5	10%		5	0
	7 years	6	12%		6	0
	8 years	3	6%		3	0
	Total	50	100%		29	21

The distribution of the 200 subjects among probationers, first offenders, Industrial School boys, and Industrial School girls (including Crittenton Home girls) is given in Tables 3, 4, 5, and 6.

It will be seen that 17% (conservative estimate 13%) of the probationers are defective.

Among first offenders 14% are defective.

Among State Industrial School boys 30% (conservative estimate 26%) are defective.

Among State Industrial School girls 66% (conservative estimate 52%) are mentally defective.

Table 7 shows the amount of sub-normality for the different forms of offenses. The average child charged with stealing is 1 year and 9 months retarded. Incorrigibles are 2 years and 2 months retarded. Truants are 2 years and 7 months retarded. Those charged with immorality, chiefly girls, are 4 years and 7 months retarded.

Table 8 gives the statistics under ages. It will be seen that the amount or retardation increases with the older children. The intelligence quotient

Table 7

Offence	Amount Retarded	Total Cases*
Stealing	1-9	79
Incorrigibility	2-2	97
Truancy	2-7	38
Immorality	4-7	33

*More than 200 offences are recorded here, there being in many instances several charges against the same subject.

Table 8

Age	Average Age	Average Men. Age	Retarded	Intell. Quot.	Basal Age	Grades Retarded	Boys	Girls	Total
7	7-6	7-0	0-6	.93	6	1	1	0	1
8	8-8	9-3	+0-7	1.07	8	.5	3	0	3
9	9-4	9-0	0-4	.96	8	1	4	0	4
10	10-6	10-1	0-5	.97	9.25	.8	13	0	13
11	11-6	10-11	0-7	.95	9.3	1.2	16	0	16
12	12-4	11-4	1-0	.92	9.2	1.5	17	1	18
13	13-7	11-10	1-9	.87	10.1	2.0	28	3	31
14	14-6	11-11	2-7	.82	10.0	2.6	35	3	38
15	15-5	12-8	2-9	.82	10.1	3.25	20	8	28
16	16-5	13-3	3-2	.81	10.0	5.5	13	8	21
17	17-4	12-4	5-0	.71	9.8		0	14	14
18	18-2	12-9	5-5	.70	10.0		0	9	9
19	19-3	13-8	5-7	.71	10.2		0	4	4
Total							150	50	200

of course decreases in a corresponding measure. The older the child, the more backward he is in school; that is, he tends to remain stationary. In general, the older children are repeaters in delinquency, though this fact is not very strikingly brought out in Table 1. It will be seen that the first offenders are only one month younger than the probationers in general. They are not very much younger than the Industrial School boys.

As a matter of interest I estimated the mental ages of 150 of the subjects before examining them. Fifty-four of the estimates were approximately correct; that is, the error was less than a year either way. Seventy of the subjects were estimated too high, the average error being 2 years and 7 months. Twenty-six of the subjects were estimated too low, the average error being 2 years and 2 months. These figures would seem to imply that an estimate with nothing to support it is wholly unreliable, more especially as many of the estimates were four or five years wide of the mark.

A comparison of these delinquents with non-delinquents is now in order. First, referring to the school record, we find that the average probationer is two grades retarded. Comparing these figures with those for non-delinquent children, we find that among 16,000 boys in the grade schools of Denver, 10,000 are one grade or more retarded. Nearly 5,000 of these are two grades or more retarded. But when we consider the number of boys in their normal grades and the number advanced, we find that the average school boy is almost exactly one grade retarded. Since our probationers are two grades retarded, it is evident that they are considerably more retarded than non-delinquent boys.

We have found that 32.5% of our subjects are feeble-minded, or to speak more accurately, are three years or more retarded. Goddard estimates that among American school children 2% are feeble-minded. How-

ever, on analyzing Goddard's statistics for tests conducted with 1,500 school children* we find that no less than 8.5% of the children are three years or more retarded. The percentage of our probationers three years or more retarded is twice as great; the percentage of State Industrial School boys is four times, and of State Industrial School girls eight times as great.

At this point one may well call in question the commonly accepted criterion of feeble-mindedness, which is three years or more retardation.* This criterion gives us 8.5% of our school children defective. Presumably it is this same criterion that accounts for the numerous reports from the different reformatories in which more than 80% of the children are recorded as feeble-minded. One would judge that the standard is a little too severe, and it may be noted that Goddard with his 1,500 tests seems to reduce his proportion of defectives to 3% by accepting four years' retardation as the criterion of feeble-mindedness.

If the same standard is applied to our two hundred subjects, we have 6% of the probationers and first offenders feeble-minded. We have 18% of the State Industrial School boys and 56% of the State Industrial School girls feeble-minded. It is evident that even with the more generous standard a very large proportion of the delinquents are mentally defective.

These figures add nothing new to the sum of the world's knowledge. They merely corroborate and emphasize what we already know, that a large proportion of our delinquents are feeble-minded. We know further that two-thirds of these cases of feeble-mindedness are due to heredity, and that feeble-minded people reproduce at twice the rate of the general population. But instead of sterilizing or segregating these people, we are still buying them Bibles.

*Pedagogical Seminary, June, 1911.

*Goddard says (The Training School, January, 1910), "If he (the subject) is more than three years backward he is mentally defective." Presumable, then, a child is defective if he tests three years and one month below his physical age.

Book Review

THOMAS LATHROP STEDMAN, *A Reference Handbook of the Medical Sciences,* third edition, in 8 volumes. Wm. Wood & Co., New York, 1913.

This new edition of the Handbook, completely revised and rewritten, is a most remarkable source-book of exact and authoritative information embracing the entire range of scientific and practical medicine and allied science. The five volumes which have so far appeared constitute almost a complete library for these subjects. The special articles are written by a great number of contributors and represent the latest knowledge and points of view in these fields. Among the great variety of topics included may be found the more important of those dealing with the various aspects of mental deficiency. From time to time abstracts of such articles as are of particular interest to readers of the *Bulletin* will appear in these pages.

ROBERT PAYNE BIGELOW, *Age.* In Reference Handbook of the Medical Sciences, third edition, Vol. I, pp. 144–151, Wm. Wood & Co., New York, 1913.

This article is a description of age from the developmental-functional point of view. The author distinguishes between prenatal and postnatal life, and notes that true age includes the time of life previous to birth. He mentions three principal ways of expressing age, in terms of time (chronological), in terms of physical development (anatomical age), and in terms of functional activity (physiological age). These three expressions for age are closely correlated but not so closely as is commonly supposed. Age is then divided into epochs, prenatal and postnatal. The antenatal epoch is divided into the embryonic period, which is from the time of fertilization of the ovum until the organs are clearly formed (about 60 days), and the fetal period which is from the end of the embryonic period until birth, about the 271st day. The postnatal epoch is divided into eight periods as described below.

The first postnatal period is called *the new-born baby,* which period extends from birth until the umbilical cord shrivels and falls, usually four or five days. The characteristics of this period are: sudden change in methods of respiration and nutrition, the closing of the ductus arteriosus (about the sixth or seventh day), reflex random movements including sneezing, hiccoughing, yawning, stretching, screaming, and sucking; senses are not fully developed, smell being wanting and vision supersensitive, with

probably imperfect images; there is a loss of weight during the first few days, and mortality is high. The most common causes of death, in order of frequency are given as premature birth 44 per cent., congenital debility 16 per cent., malformation 12 per cent., with convulsions and syphilis as lesser but important causes, most of these deaths occurring on the first day or within the first week.

The second period is called *early infancy* and extends from the dropping of the cord until the first dentition, seventh to ninth month. This is the period of most rapid growth, with the skeleton still chiefly cartilaginous. The tendency to grasp is most noticeable, the sense organs become completely functional with the eyes having their greatest power of accommodation; the facial expression becomes animated and cries become meaningful and emotional. During this period congenital debility and malformations are still important causes of death, but diarrhea, enteritis, and bronchopneumonia as causes become more and more important and during the greater part of the period are the most important causes of death.

The third period, *later infancy,* begins with the eruption of the first teeth and lasts until the appearance of the permanent teeth at about the seventh year. A table shows the average ages at which the teeth normally erupt, first lower incisors at six months, first upper incisors at ten months, second lower incisors at sixteen months, second upper incisors at twenty months, first lower premolars at twenty-four months, first upper premolars at twenty-six months, second lower premolars at twenty-eight months, second upper premolars at thirty months, and canines at thirty to thirty-six months. During this period the bones of the wrist are indicants of development, changing from cartilage to bone in a definite order and at definite chronological ages. This is the age of walking and talking, beginning with monosyllabic babbling, articulation develops, and thru imitation the child learns to speak, about the end of the first year being in possession of a few simple words. Walking develops thru sitting up, standing, creeping, and assisted walking, until by the end of the third year these movements are easily co-ordinated. The chief causes of death during the first two years are diarrhea, diphtheria, and croup, with scarlet fever important in the fourth and fifth years.

Childhood, the fourth period, begins with the eruption of the first true molars and ends at pruberty, about the thirteenth or fourteenth year. At this time the brain has acquired nearly its full size and weight, health is at its best, activity is greater and more varied than ever before or after, and there is peculiar resistance to fatigue; independent interests develop, perception is very acute, and there is great immunity to exposure, danger, accident, and temptation. Reason, true morality, religion, sympathy, love, and esthetic enjoyment are but slightly developed. A table shows the average age of eruption of the permanent teeth for the sexes, first molars 5-6

years, first incisors 6-7 years, second incisors 8.5 years, first premolars 9-10 years, second premolars 10-11 years, canines 11-12 years, second molars 12-13 years, third molars 18-25 years. More deaths occur in the first half of this period than in the second half, with diphtheria most frequent and scarlet fever, tuberculosis, and pneumonia next in order. In the second half of the period tuberculosis becomes most important, with typhoid fever second, appendicitis third, and diphtheria fourth.

The period of *adolescence* covers the years from the beginning of puberty until full stature is attained, from about 12 to 21 years, for girls, and 14 to 25 for boys. In girls the first menstruation is ordinarily considered the beginning of the period and in boys the appearance of pubic hair. The onset of adolescence in girls varies from 12 to 20 years with 16 as the year of greatest frequency, but there is a factor of geographical situation, pubescence being earlier in the more southern countries. For boys pubescence is complete in about 50 per cent. by the middle of the 15th year, but here also individual variation is marked and climate must be considered. During this period, the rate of growth, which has decreased during later childhood, suddenly increases again before finally falling off. There is an acceleration in weight and strength at the same time. There are other physical and physiological changes characteristic of the period. physiologically (quoting Hall) "Adolescence is a new birth, for the higher and more completely human traits are now born. * * * The functions of every sense undergo reconstruction; and their relation to other psychic functions change. * * * The voice changes, vascular irritability, blushing, and flushing, are increased. Sex asserts its mastery in field after field. There are new repulsions felt toward home and school, and truancy and runaways abound. The social instincts undergo sudden unfoldment, and a new love of life awakens. It is the age of sentiment and religion, of rapid fluctuation of mood, and the world seems strange and new. Interest in adult life and in vocations develops. Youth awakes to a new world, and understands neither it nor himself:" The death rate is still low but greater than in childhood, with tuberculosis by far the most important cause, typhoid fever being second, and organic heart disease and pneumonia third.

Maturity is the sixth period of age, beginning at the end of adolescence and extending to the decline of the sexual functions, about the 45th year, marked in women by the menopause, and in men less clearly by the diminishing of sexual activity. This is the time of complete functional activity, with psychical and physical powers at their maximum. Tuberculosis causes 35 per cent. of all deaths during this period, with typhoid fever the next important cause of death.

Middle age designates the next period, which is not closely demarcated at either end. Beginning with the loss of sexual activity it extends to the waning of the physical and mental powers. The physical signs are graying

of the hair, loss of muscular power, and of vigor of some internal organs, and lessening power of ocular acocmmodation. The fatal disease of the period are heart disease, nephritis, and cancer.

The final period is termed senescence, and is marked by profound degenerative changes which finally end in death. The period is considered begun with the decline of the bodily or mental functions which render the individual incapable of continuing his previous occupations. In this period heart disease is the principal cause of death, with cerebral hemorrhage, resulting from arteriosclerosis, the characteristic malady of old age.

E. A. Doll.

The Lessons of the Defective Child

(Summer School Paper No. 16.)

For many years our best energy in the charitable and correctional field has been given to taking care of conditions after they have occurred. We have built hospitals for the sick, institutions for the feeble-minded, almshouses for the poor, and jails for the criminals; only to find from year to year that we have them increasing even more rapidly than we are making provision to care for them. It is a very common thing to see that the State has appropriated money for the construction of new buildings for its wards, only to find by the time the buildings were ready for occupancy that the waiting list that had demanded the construction of these buildings had doubled and the State was required to do the things all over again. It is only of late years that we have begun to seriously consider the matter of prevention. People are not willing to give it the attention it demands.

We believe that every public institution should be a laboratory, in which any of the social problems that come under the attention of such an institution should have consideration, be studied, and, if possible, a solution to the problem be offered. With that in view, we established our Department of Research and began the study of a number of the problems relating to mental deficiency.

The thing that troubled us most was that there was no normal standard by which we could measure our children. A few years ago, Dr. Binet, a French physician and psychologist, began a series of tests, and after experimenting very thoroughly with a number of thousands of children he evolved what he called "A Measuring Scale of Intelligence." This Dr. Goddard translated into English and modified so as to fit the conditions in the United States, and we used it as a basis for the examinaion of our children.

After we had tested our own children, we made a very exhaustive test of normal children. Indeed, these tests of normal children are being carried

on in a number of localities at the present time, and everything seems to indicate that they are exactly what is claimed for them and that we may use them safely in the measuring of the intelligence of normal and backward children.

One thousand five hundred and forty-seven children were tested in one public school system. This included every child in the first five grades. Of this number was found,—

1—Four	years	above	grade
13—Three	"	"	"
55—Two	"	"	"
279—One	"	"	"
582—At Grade			
329—One	year	below	grade
157—Two	"	"	"
83—Three	"	"	"
32—Four	"	"	"
10—Five	"	"	"
5—Six	"	"	"
1—Seven	"	"	"

When these numbers are worked into a curve we find that 4 per cent. of these children are two or more years above grade, and, therefore, are the *exceptionally bright;* 78 per cent. are about *normal;* 15 per cent. are two or three years behind grade, and are the *backwards* or *laggards,* and 3 per cent. are over three years behind grades, and are the *feeble-minded.*

While, of course, we cannot say with absolute certainty that these percentages will hold good in every community, there is but little doubt that they will be practically true in any ordinary school system. For the sake of the normal children, if not for their own sake, all of these children who are more than three years behind their grade should be segregated and given special instruction, care and attention.

A number of things will be found which cause this condition. Some of them may be remediable, such as adenoids, enlarged tonsils, etc. The Medical Inspector will find that many of the 15 per cent. (those who are laggards) are behind their grades because something which the doctor could remedy had been allowed to go on without attention. Of those who are actually feeble-minded, the larger number will probably be found to be so because of hereditary conditions. A study made of nearly three hundred families, starting with the feeble-minded child now in the Training School, shows that about 60 per cent. of the cases have feeble-minded ancestry. These cases should be so segregated that there is no possibility of their marrying, or in any way transmitting their kind. The condition of some of these families is appalling.

Recently we had completed the study of 187 different families, which have been tabulated as follows: The total number of individuals from these 187 families is 8,602. Of these—

2,094 are known to be normal.
899 are feeble-minded.
36 are epileptic.
192 are alcoholic.
227 are tuberculous.

In one family alone we have found 976 individuals. Four hundred and eighty-seven of these are unknown—that is, we do not know just what their mental condition is; 123 are known to be normal, and 234 in this one family are known to be defective. Eighty-six died in infancy.

The following outline, taken at random, will show you how some of these hereditary families run:

1. An alcoholic, insane paternal grandfather; a tuberculous, cancerous maternal grandmother; imbecile mother with feeble-minded sister married to imbecile father. Result: Five feeble-minded children, one dead, one in custody; all the rest at large.

2. A feeble-minded paternal grandmother; a neurotic maternal grandfather; an alcoholic father, a neurotic mother with a "queer" sister. Result: Ten children—eight feeble-minded, two uncertain; only one in proper custody.

3. An insane father; a feeble-minded mother. Result: Seven children, all mentally deficient; one in proper custody, one married; three in almshouse with mother.

And so I might go on, citing case after case.

The most important lesson that the study of these defectives teaches us is that we must search them out to find those who are in the condition they are because of heredity, and then see that they are segregated so that there is no possible chance that they or their children or their kin marry into the good stock of the community.

A study of the workings of the minds of these children leads us to see that very much oftener than we believe children do not understand what we are trying to say to them. We give them instructions and get replies, answers or actions that we do not expect at all. A careful investigation usually shows us that we have expected them to know more than they really do. There is no doubt in my mind that many children in the public schools and in the ordinary walks of life are being required constantly to do things which we, in our wisdom, think they know all about, but which, as a matter of fact, they frequently do not thoroughly understand, and so they give us the wrong answers.

In the schools children are examined from time to time, but frequently the questions are such as can be answered if the child memorizes well.

Now it is a fact that our children have apparently very good memories, but when they come to reason and use judgment, both their reason and judgment are poor. We find children constantly doing things that we call bad. Children occasionally do bad things, and very frequently do things which we call bad but which to them are all right. One great lesson that is borne in upon us all the time is that when a child does something which we think it should not do, we must investigate, and constantly ask "Why?" When we get the reason we usually find either that we ourselves are to blame or that we are asking the child to do something that it is incapable of doing.

One other great lesson that the defective child teaches us is that of happiness. Here everything that is done is to be done as a privilege, and, therefore, the child has a desire to do, and having the desire, does whatever we set before it in a spirit of joy and gladness. We ourselves are constantly seeking one thing above all else. No matter what we do, or how we do it, it is done with the idea that it will in some way increase our happiness. I cannot understand, after working with children of simple minds, who go direct to the thing they want without any preliminaries or any beating about the bush, why we, who call ourselves normal, should not follow the same plan. We see before us things which we believe will make us happy. Instead of going directly to them and so learning our lesson promptly, we wander here and there, hoping that some day circumstances will be such that we may find joy and gladness. The defective children go direct, and teach us that if we have happiness first, everything else within our power will follow.

The Twenty-seventh Annual Report of the Training School has just come from the printer and we shall be glad to send a copy to anyone who desires it. Just drop a card to the Training School, Vineland, N. J., and you will receive the report by return mail.

Agricultural Work

George A. Mitchell

Three lines of work that were undertaken by the Pomona Grange Experiment Committee and carried on by the South Jersey Demonstration Society, which have been described in various articles in the Training School during the past ten years, have been continued to the present time.

These are the investigation of sweet potato disease, the investigation and demonstration of irrigation problems and the demonstration of the value of legume crops.

The sweet potato disease investigation, made by Mr. L. L. Harter, of the United States Department of Agriculture, has shown that both stem rot and black rot can be reduced by careful selection of seed and sterilization of the seed and hot bed soil. This selection of seed has been made on the Training School and neighboring farms every fall for four seasons by Mr. Harter, and each year plants from this seed have been grown in comparison with plants grown of seed selected in the usual manner. With few exceptions this carefully selected seed has produced plants freer from both stem rot and black rot than the plants with which they were compared.

In the beginning of this seed selection no attention was paid to selection from the best hills, since the object was to investigate disease only As a result the hills of potatoes from the selected seed had fewer primes and were not as good shape as the hills from the farmers' stock with which comparison was made. In some instances this was so striking that it did not appear to the farmers that the seed selection amounted to anything, although much less disease was shown in the selected seed. For the past two years seed potatoes have been taken only from the best hills, which are also free from disease. As a result much less stem rot and black rot have developed in the plants from the selected seed, and the hills being fully as good, and, in many cases, better than those on the farms where the comparison was made, the yield from the selected plants has been from thirty to fifty per cent. greater.

Another result of either selection or sterilization showed up very plainly this year. That was the discoloration, which has generally been attributed to organic matter in the soil, was noticeably absent from the hills grown from selected seed; whereas, in the rows immediately alongside this discoloration was present. While this discoloration does not affect the quality of the potato, it very seriously affects the market value.

This sweet potato disease investigation will be continued at least another year under Mr. Harter's direction, but the investigation so far, at least, as stem rot is concerned, is considered finished, and it only remains to demonstrate the value of the methods learned. This demonstration does not come within the scope of Mr. Harter's office, and he may be obliged to give up the sweet potato work. In the judgment of the writer the way to make this completed investigation of real value to the farmers of this section is to have sweet potato plants grown on a sufficiently large scale at one place so that a plant pathologist from the State Experiment Station or National Department of Agriculture can be induced to supervise the work year after year from the selection of the seed to the pulling of the plants. Just the best method of bringing this state of affairs about is still a question.

Irrigation

Irrigation has become quite popular in Cumberland County, and a great many small irrigation plants are now in operation. These may be called quite generally successful, provided the irrigation plant was not installed first and the water supply sought afterwards. There are also several large irrigation enterprises in the county. The prospect is that irrigation will develop in this vicinity as rapidly as it is healthy for it to develop.

One element in irrigation matters that might receive attention from public spirited men who desire to use some money for the public welfare without giving it away, is the erection of a large irrigation system to supply small farms owned by people with comparatively small capital. If, in consideration of this assitance in financing these small farmers would consent to direction by an overseer, it would seem that the investment of the money in this way might be a fairly safe one. With the talk about hard times, coupled with the desire on the part of so many to "get back to the land," it is quite possible that families of ability and determination to succeed could be secured for an enterprise of this kind. The engineering details of irrigation are pretty well understood, and advice and engineering assistance in the erection of irrigation plants can be had from the United States Department of Agriculture or from our State Experiment Station, the latter having taken up the study of irrigation problems.

Cow Peas and Soy Beans

The value of cow peas and soy beans for hay crops and also as soil improvers has been demonstrated all over the world by investigators and experimental stations. These demonstrations are of special value for Southern Jersey, and many local demonstrations were made by the Society for Farming Demonstrations.

In particular it was shown that good crops of cow peas and soy beans can be grown on land that has been planted to sweet potatoes one or more years. The potash and phosphorus content of fertilizers used for sweet

potatoes prepares the ground for a legume crop the next year. The importance of this fact is very great for the line of farming carried out on the sandy soil of Southern Jersey, because in such soils it is difficult to produce hay, and also because the soil is in need of the humus resulting from plowing under the whole cow pea or soy bean plant, or plowing under the stubble only.

During the last three years tools for harvesting cow pea and soy bean seed have been so improved that in the case of soy beans the seed can be harvested and all of the leaves and stalks left on the ground, thus securing a money crop in the seed and also leaving almost all of the humus producing part of the plant on the ground. In the case of cow peas this same thing can be done, or the cow pea can be harvested when about half of the seed are ripe, cured and threshed, thus securing both a hay crop and a seed crop. The first method has been used by the writer, who has this year produced twelve tons of soy bean and cow pea seed. Practically all of this seed was harvested and threshed in the one machine, leaving the vines and leaves on the ground for fertilizing purposes.

This coming year, on account of the difficulty in securing potash for fertilizers, the farmers may welcome the knowledge that has been secured concerning the value of soy bean and cow peas as hay producing and humus producing crops. A great many farmers about Vineland buy hay, but if it is going to be less profitable the coming year to grow sweet potatoes because the European war prevents the shipping of potash, then it may pay more farmers to produce their own hay this coming year.

Alfalfa is growing in favor in Southern Jersey, but for a small farmer it has the difficulty of being bothersome to mow a small acreage four times each year, unless he has a mowing machine of his own.

The New York University Summer School for Teachers of Defectives will be held from July 3, to August 10, 1916, at the University Buildings, Washington Square, New York City. Several valuable courses are offered.

The Summer School for Teachers of backward or mentally deficient children, will be held from July 10, to August 13, 1916, here at Vineland. The fee of $75.00 includes tuition, board and lodging. The "Announcement" will soon be ready for distribution and will be sent upon request.

Directory of American Psychological Periodicals

American Journal of Psychology—Worcester, Mass.: Florence Chandler.
Subscription $5. 600 pages annually. Edited by G. Stanley Hall.
Quarterly. General and experimental psychology. Founded 1887.

Pedagogical Seminary—Worcester, Mass.: Florence Chandler.
Subscription $5. 575 pages annually. Edited by G. Stanley Hall.
Quarterly. Pedagogy and educational psychology. Founded 1891.

Psychological Review—Princeton, N. J.: Psychological Review Company.
Subscription (with Psychological Bulletin) $5. 480 pages annually.
Bi-monthly. General. Founded 1894. Edited by Howard C. Warren.

Psychological Bulletin—Princeton, N. J.: Psychological Review Company.
Subscription $2.75. 480 pages annually, Psychological literature.
Monthly. Founded 1904. Edited by Shepherd I. Franz.

Psychological Monographs—Princeton, N. J.: Psychological Review Company.
Subscription $4. 500 pp. per vol. Founded 1895. Edited by James R. Angell.
Published without fixed dates, each issue one or more researches.

Psychological Index—Princeton, N. J.: Psychological Review Company.
Subscription $1. 200 pp. Founded 1895. Edited by Madison Bentley.
An annual bibliography of psychological literature.

Journal of Philosophy, Psychology and Scientific Methods—New York:
Science Press. Bi-weekly. 728 pages per volume. Founded 1904.
Subscription $3. Edited by F. J. E. Woodbridge and Wendell T. Bush.

Archives of Psychology—Sub-station 84 N. Y.: Archives of Psychology.
Subscription $5. 600 pp. ann. Founded 1906. Edited by R. S. Woodworth.
Published without fixed dates, each number a single experimental study.

Journal of Abnormal Psychology—Boston: Richard G. Badger.
Subscription $4. 480 pages annually. Edited by Morton Prince.
Bi-monthly. Founded 1906. Entire field of abnormal psychology.

Psychological Clinic—Philadelphia: Psychological Clinic Press.
Subscription $1.50. 280 pages annually. Edited by Lightner Witmer.
Monthly (9 numbers). Orthogenics, psychology, hygiene. Founded 1907.

Training School Bulletin—Vineland, N. J.: The Training School.
Subscription $1. 240 pages annually. Monthly (10 numbers). Founded 1904.
Edited by E. R. Johnstone. Psychology and training of defectives.

Journal of Religious Psychology—Worcester, Mass.: Louis N. Wilson.
Subscription $3. 480 pages per vol. Founded 1904. Ed. by G. Stanley Hall.
Published without fixed dates. 4 numbers constitute a volume.

Journal of Race Development—Worcester, Mass.: Louis N. Wilson.
Subscription $2. 460 pages annually. Founded 1910.
Quarterly. Edited by George H. Blakeslee and G. Stanley Hall.

Journal of Educational Psychology—Baltimore: Warwick & York.
Subscription $2.50. 600 pages annually. Founded 1910.
Monthly (10 numbers). Managing Editor, J. Carleton Bell.
(Educational Psychology Monographs. Edited by Guy M. Whipple.
Published separately at varying prices. Same publishers.)

Journal of Animal Behavior—Cambridge, Mass.: Emerson Hall.
Subscription $3. Foreign $3.50. 450 pages annually. Founded 1911.
Bi monthly. Edited by Robert M. Yerkes.

The Behavior Monographs—Cambridge, Mass.: Emerson Hall.
Subscription $3. 450 pages per volume. Edited by John B. Watson.
Published without fixed dates, each number a single research.

Psychoanalytic Review—New York: 64 West 56th Street.
Subscription $5. 500 pages annually. Psychoanalysis.
Quarterly. Founded 1913. Ed. by W. A. White and S. E. Jelliffe.

Journal of Experimental Psychology—Princeton, N. J.: Psychological Review Company. 480 pages annually. Experimental. Founded 1916. Subscription $3. Bi-monthly. Edited by John B. Watson.